The Use of Clotting-Factor Concentrates For the Treatment of Hemophilia

Potent concentrates are now available for use in treating both factor VIII (antihemophilic factor) deficiency, classical hemophilia, and factor IX deficiency, Christmas disease. Cryoprecipitate prepared from single donor plasma is probably the most readily available and least expensive source of factor VIII; each bag of cryoprecipitate contains about 100 to 130 units of factor VIII activity (1 unit equals the activity in 1 ml of average fresh normal plasma). Factor VIII is also available as lyophilized cryoprecipitate (Courtland Antihemophilic Factor — about 250 units per 25 ml) and as a more potent concentrate made by Hyland (Hemophil®—about 250 units in 7 ml, also available in larger sizes).

Factor IX is present in whole plasma and is also available as a concentrate from Cutter (Konyne® — about 500 units in 25 ml). Proper use of concentrates for replacement therapy in hemophilics now makes surgical procedures much safer now than they were previously with only plasma.

CHARLES F. ABILDGAARD, M.D.

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Recognition and Treatment Of Intravascular Coagulation

Disseminated intravascular coagulation (DIC) may be associated with a wide variety of diseases either as a complication or a pathogenetic mechanism. DIC may result in thrombotic complications due to widespread fibrin deposition or in hemorrhage due to consumption of coagulation factors, or in both. A number of rapidly available tests are useful in recognizing the problem: platelet count, prothrombin time, partial thromboplastin time, fibrinogen screening test. Quantitative assays for fibrinogen, factor V, factor VIII are also helpful as is measurement of fibrinolysis and fibrin split products. Control of DIC by administration of heparin may be life-saving, but treatment of an underlying disease may be required for complete control. Examples of diseases that may be associated with DIC are: sepsis, burns, shock, metastatic malignancies, obstetrical complications, purpura fulminans, postoperative state (and many others).

CHARLES F. ABILDGAARD, M.D.

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Current Immunization Procedures

The availability of new attenuated live virus vaccines has led to reexamination of immunization recommendations. In the first year of life DPT and polio immunization (given at the same time) are currently recommended. Vaccine for measles, mumps, smallpox and now rubella should not be given earlier than one year of age, both because of lower take rates and potentially higher adverse reactions. It is not clear whether or not boosters will be necessary for all of these live virus vaccines. Recent information indicates that tetanus antibody persists for a long time. Routine tetanus boosters are being given too frequently, and adverse reactions of hypersensitivity have been increasingly reported. The current recommendation for tetanus boosters after a primary series is every ten years. If a dose is administered as part of wound management, then the ten-year interval is determined from that date. The physician must remain flexible in his immunization recommendations to adapt to the new information concerning vaccine administration.

ALLEN W. MATHIES, JR., M.D.

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